Air Quality Permitting
Statement of Basis

March 27, 2006

Tier II Operating Permit
No. T2-040020

US ECOLOGY IDAHO, GRAND VIEW

Facility ID No. 073-00004

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PROPOSED for PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
EUI	Emission Unit Identification
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
m	meter(s)
MACT	Maximum Available Control Technology
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
Rules	Rules for the Control of Air Pollution in Idaho
SIP	State Implementation Plan
SM	synthetic minor
SO_2	sulfur dioxide
T/yr	Tons per year
$\mu g/m^3$	micrograms per cubic meter
USEI	US Ecology Idaho
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.400 *Procedures and Requirements for Tier II Operating Permits.*

2. FACILITY DESCRIPTION

US Ecology Idaho is a solid and hazardous waste treatment, storage, and disposal facility. Waste is trucked to the facility and prepared for disposal in landfill cells onsite. Waste is treated in two different areas of the facility; the Containment and Stabilization Building, and in Outdoor Stabilization.

The Containment and Stabilization Building is divided into two separate rooms; one room is used for containment operations (sorting, and crushing and screening), and the other room is used for indoor stabilization operations. The rooms are separated by a curtain that allows forklift and backhoe traffic to pass.

Containment operations include sorting, waste transfer, and crushing and screening.

The indoor stabilization process produces stable products by mixing waste with reagents in either of two mixing tanks capable of holding up to 60 tons of untreated waste each. Common reagents are cement, lime, ferrous sulfate ($FeSO_4$), and clay.

Outdoor stabilization operations produce stable products by mixing with reagents in either of two mixing bins capable of holding up to 30 tons of untreated waste each.

Emissions from these processes are PM, VOCs, HAPs, and TAPs. VOC emissions are negligible because the waste streams are not volatile; however, there are minor amounts of VOCs. HAP and TAP emissions from the waste are mostly metals. TAPs emissions are also associated with process reagents used to stabilize the waste.

3. FACILITY / AREA CLASSIFICATION

USEI is defined as a minor facility because its potential to emit is less than all applicable major source thresholds.

The facility is located within AQCR 63 and UTM zone 11. The facility is located in Owyhee County which is designated as unclassifiable for all criteria pollutants (PM_{10}, CO, NO_x, SO_2, lead, and ozone).

The AIRS information provided in Appendix C defines the classification for each regulated air pollutant at USEI. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

The USEI facility at Grand View has submitted a Tier II operating permit application to limit emissions from its facility to protect ambient air quality standards.

4.1 Application Chronology

6/22/04	Permit application received.
7/15/04	Permit application deemed complete.

8/11/04	USEI requests a draft permit.
11/9/04	Maximum production rates are established for every process.
6/14/05	Draft permit was sent to USEII.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II permit.

5.1 Equipment Listing

Table 5.1 shows the emission units and processes at the USEI facility.

Table 5.1 EMISSION UNITS AT US ECOLOGY IDAHO

Source Description	Emissions Control(s)
I. Containment and Stabilization Building	
A. Building fugitive emissions	A. Negative building pressure: maintained by Containment or Stabilization building ventilation baghouses.
B. Containment Operations	
1. Building ventilation baghouse; EUI[1] 'General'. The General baghouse collects emissions from waste transfer, as well as sorting, crushing, and crushing screening which were not captured by their specific baghouse.	B1. Building ventilation baghouse: Day HP Dust Filter, Model No. 128. Efficiency: 99.5% for PM.
2. Sorting; EUI 'SORT'. The 'SORT' baghouse collects emissions from sorting operations.	B2. Sort floor baghouse: Day HP Dust Filter, Model No. 160 or equivalent. Efficiency: 99.5% for PM.
3. Crushing; EUI 'CRUSH'. The 'CRUSH' baghouse collects crushing and crushing screening emissions.	B3. Crush baghouse: Day HP Dust Filter, Model No. 128. Efficiency: 99.5% for PM.
C. Indoor Stabilization Operations:	
1. Building ventilation system; EUI 'STAB'. The 'STAB' baghouse and HEPA filters collect emissions from all indoor stabilization operations. The baghouse and HEPA are connected in series.	C1. Building ventilation: Donaldson 320HPW8 baghouse + Donaldson Ultra-Lock HEPA. Combined PM efficiency of 99.97%.
2. Two Indoor Stabilization Additive Silos: the silo baghouses collect emissions during silo filling. Additives are typically Portland cement or lime (58.5% CaO). EUI 'A_SILO' EUI 'L_SILO'	C2. Additive silo baghouses: both Indoor stabilization additive silos use a Stephens Model No. SV380 baghouse rated at 99.5% efficient for PM.
II. Outdoor Stabilization facility	
A. Waste stabilization: EUI 'OSW'Waste stabilization includes waste addition to the processing bin, clay addition, $FeSO_4$ addition, cement addition, and lime addition.	A. A waste processing bin lid covers the processing bin during lime and cement addition; rated at 25% efficient for PM.
B. Three Additive silos: the silo baghouses collect emissions during silo filling. Additives are usually Portland cement or lime (58.5% CaO). EUI 'OSA' EUI 'O_SILO' Additive silo[2]	B. Additive silo baghouses Each silo is equipped with a Mikropul 'Pulsair' baghouse rated at 99.5% efficient for PM.

1. EUI: Emission Unit Identification, as supplied by USEII.
2. No EUI provided.

5.2 Emissions Inventory

A detailed Potential to Emit emission inventory is included as Appendix A. Note that combustion products NO_x, SO_x, and CO are not listed because the facility does not use combustion in any of the waste treatment processes.

5.3 Modeling

Table 5.2 is a summary of the air dispersion modeling analysis. The results of the analysis demonstrate, to DEQ's satisfaction, that the US Ecology facility will not cause or significantly contribute to a violation of any ambient air quality standards. A detailed modeling analysis is included as Appendix B.

Table 5.2 RESULTS OF FULL IMPACT ANALYSIS

Pollutant	Averaging Period	Facility Ambient Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Ambient Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
PM_{10}	24-HR	6.12[a]	73.0	79.12	150	53%
	Annual	1.10[b]	26.0	27.10	50	54%
Lead	Month	0.37[c]	0.03	0.40	1.5c	27%

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this T2.

IDAPA 58.01.01.401.....Tier II Operating Permit

The USEI facility at Grand View has submitted a Tier II operating permit application to limit emissions from its facility to protect ambient air quality standards.

IDAPA 58.01.01.205.....Prevention of Significant Deterioration

This facility is not a designated facility and the emission of any single pollutant is less than 250 T/yr. Therefore, this facility is not subject to PSD requirements.

40 CFR 60 .....New Source Performance Standards

No equipment or process at the facility is subject to NSPS requirements.

40 CFR 61 and 63 .....National Emission Standards for Hazardous Air Pollutants and MACT

No NESHAP or MACT standards apply to this facility.

5.5 Fee Review

Table 5.3 shows the USEI Tier II processing fee according to IDAPA 58.01.01.407. PM_{10} emissions (0.71 tons per year) and TAP/HAP emissions (1.30 tons per year) place the facility at permitted emissions of one to less than 10 tons per year.

Table 5.3 TIER II PROCESSING FEE SUMMARY

Emissions Inventory	
Pollutant	**Permitted Emissions**
NO_x	0.0
SO_2	0.0
CO	0.0
PM_{10}	0.7
VOC	0.0
TAPS/HAPS	1.3
Total:	0.0
Fee Due	**$ 2,500.00**

6. PERMIT CONDITIONS

Permit Condition 2.1: Facility Wide Operations & Maintenance Manual Requirements

The Permit Condition requires O&M manuals for facility baghouses and the HEPA filter. Copies of the O&M manuals shall be posted at the location of the applicable control device, and readily accessible to shift workers. The O&M manuals shall contain all information necessary for maintaining maximum equipment efficiency.

Permit Condition 2.3: Facility Wide Fugitive Emissions

The Permit Condition requires quarterly facility-wide inspections of potential sources of fugitive emissions.

Permit Condition 2.9: Facility Wide Visible Emissions

The Permit Condition requires quarterly facility-wide inspections of potential sources of visible emissions.

Permit Condition 3.4: Containment Operations (Sorting and Crushing and Screening) Throughput Limits

The Permit Condition limits yearly sorting throughput to 876,000 tons of waste per year, and crushing throughput to 438,000 tons of waste per year. The throughput limits are based on full time operations at the maximum achievable equipment process rates of 100 tons of waste per year for sorting, and 50 tons of waste per year for crushing.

Permit Condition 3.6: Operation of Air Pollution Control Equipment

The Permit Condition requires baghouse operations during any building operations, including maintenance of building negative pressure to reduce building fugitives. Building negative pressure is accomplished with the building ventilation systems which exhaust through baghouses.

Permit Condition 3.7: Throughput Monitoring Requirement

The Permit Condition requires 12 month waste throughput monitoring and recordkeeping for the sorting as well as the crushing operations.

Permit Condition 3.8: Pressure Drop Monitoring Requirement

The Permit Conditions requires daily pressure drop monitoring and recording for the sort baghouse, the crush baghouse, and the building ventilation baghouse. Pressure drop shall be recorded in a log located near the baghouse.

Permit Condition 4.4: Indoor Stabilization (Waste Mixed with Reagents) Throughput Limits

The maximum indoor stabilization processing rate is 300 tons per hour. Air dispersion modeling of emissions at that process rate complied with all state and federal ambient air quality standards. Therefore, indoor stabilization is throughput limited to the maximum processing rate at full time operations, or 2,628,000 tons of waste per year.

Silos have the highest emission rate during filling. Air dispersion modeling of emissions at the maximum fill rate of 50 tons per hour complied with all state and federal air quality standards. Therefore, the indoor stabilization silos, used for Portland cement and/or lime, are throughput limited to the maximum fill rate at full time operations, or 438,000 tons of reagent per year. Note that only one silo can be filled at a time due to facility design; therefore, the total throughput limit for silos is calculated and limited at full time operations for one silo only.

Permit Condition 4.6: Operation of Air Pollution Control Equipment

The Permit Condition requires operation of the building ventilation baghouse and HEPA filter during any building operations, as well as negative building pressure, which is accomplished with the baghouse and HEPA filter.

Permit Condition 4.7: Throughput Monitoring Requirement

The Permit Condition requires waste and silo throughput to be recorded monthly and calculated as a rolling 12 month total. Silo throughput shall be summed as a total regardless of the reagents used because air dispersion modeling was conducted for the worse case scenario of 100% Portland cement emissions.

Permit Condition 4.8: Pressure Drop Monitoring Requirement

The Permit Conditions requires daily pressure drop monitoring and recording for the indoor stabilization baghouse and HEPA filter. Pressure drop shall be recorded in a log located near the devices.

Permit Condition 5.4: Outdoor Stabilization Facility Throughput Limits

The maximum outdoor stabilization processing rate is 270 tons per hour. Air dispersion modeling of emissions at that process rate complied with all state and federal ambient air quality standards. Therefore, outdoor stabilization is throughput limited to the maximum processing rate at full time operations, or 2,365,200 tons of waste per year.

Silos have the highest emission rate during filling. Air dispersion modeling of emissions at the maximum fill rate of 50 tons per hour complied with all state and federal air quality standards. Therefore, the outdoor stabilization silos, used for Portland cement and/or lime, are throughput limited to the maximum fill rate at full time operations, or 438,000 tons of reagent per year. Note that only one silo can be filled at a time due to facility design; therefore, the total throughput limit for silos is calculated and limited at full time operations for one silo only.

Permit Condition 5.6: Operation of Air Pollution Control Equipment

The Permit Condition requires operation of the silo baghouses during silo filling operations.

Permit Condition 5.7: Monitoring Requirement

The Permit Condition requires waste and silo throughput to be recorded monthly and calculated as a rolling 12 month total. Silo throughput shall be summed as a total regardless of the reagents used because air dispersion modeling was conducted for the worse case scenario of 100% Portland cement emissions.

7. PUBLIC COMMENT

A draft permit was provided for the facility on June 9, 2005. Comments were received and have been incorporated into this permit.

A draft permit was made available for regional office review on June 9, 2005. Comments were provided and have been incorporated into this permit.

A public comment period on this proposed Tier II operating permit and permit to construct will be provided as required by IDAPA 58.01.01.404.01.c and 209.01.c.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue a proposed Tier II Operating Permit and Permit to Construct No. T2-040020 for public comment.

CM/bf Permit No. T2-040020

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